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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of
Ryuzo UENO, ET AL.
Serial No. 10/030,981
Filed: March 2, 2001
For: CRYSTALLINE MIXTURE SOLID COMPOSITION AND PREPARATION
THEREOF

Hon. Commissioner of Patents and Trademarks
Washington, D.C. 20231

DECLARATION

I, Yojiro Furukawa, am one of the inventors of the present invention.

I graduated from Kagoshima University (department of Biological Chemistry) in 1991. I joined to Ueno fine chemicals Industry, Ltd. in 1991. At present, I am working to Laboratory of Research & Development Food Division. Mainly I am examining the production process (Enzyme reaction, Extraction, Crystallization and Milling etc.) of the sugar and the likes.

I have conducted the following experiment to find whether a product obtained by reworking Example 3 of US Patent No. 6103894 cited in the Office Action for the present application is amorphous or crystalline.

<Experiment>

(1) raw material

Reduced palatinose obtained by hydrogenating a mixture of palatinose and trehalulose prepared by isomerizing cane sugar and having composition shown in Table-1 below was used as a raw material. Since "nickel, nickel oxide and tungsten oxide catalysts" used in Example 3 of US 6103894 are special and hard to obtain, a general-purpose Raney nickel catalyst was used in this experiment.

Table-1

1-6 GPS	1-1 GPS	1-1 GPM	Monosaccharide
32.96	2.59	56.40	8.05

(2) concentration

The above raw material was dissolved in water to a solid content of about 50 %. This solution was concentrated with an evaporator under conditions shown in Table-2 below to prepare a concentrated solution.

Table-2

Pressure	Bath temperature	Sold content
less than 10 torr	70°C	91.4%

(3) powdering

The concentrated solution was poured into a stainless steel tray, fully cooled and left at room temperature overnight. The solidified concentrate was ground with a hammer to obtain a powder sample.

The obtained powder sample was a transparent white glass-like solid having high moisture absorptivity.

<analytical results and observations>

(1) electron microscope observation

The surface state of the powder sample was photomicrographed by a high vacuum type scanning electron microscope (S-4300 of Hitachi, Ltd.) at magnifications of 50 and 3,000 and shown in Fig.1 and Fig. 2, respectively. It is understood from these photomicrographs (Fig. 1 and Fig. 2) that the surface of each particle of the powder sample was smooth and there was no monocrystal.

(2) X-ray diffraction

The X-ray diffraction of the powder sample was carried out by a powder X-ray diffraction device (Mini Flex of Rigaku Co., Ltd.) and shown in Fig. 3 attached herewith. A definite diffraction peak did not appear. It is understood from this

result that the powder sample contained almost no crystal.

The undersigned declarant further declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such wilful false statements may jeopardize the validity of the application or any patent issuing thereon.

The 11th day of November, 2003

Yojiro Furukawa
(Yojiro Furukawa)